

What is claimed is:

1. A speaker apparatus comprising:
  - a magnetic circuit having a magnetic gap;
  - a voice coil located in the magnetic gap;
  - a voice coil bobbin having the voice coil wound thereon;
  - a diaphragm mounted on the voice coil bobbin;
  - a hollow portion defined in that portion of the magnetic circuit which is surrounded by the voice coil, the hollow portion extending in a longitudinal direction of the voice coil bobbin;
  - an elongated rod inserted in the hollow portion of the magnetic circuit and fixed to the diaphragm; and
  - at least one support member located at a predetermined position in the hollow portion of the magnetic circuit for movably supporting the elongated rod in the hollow portion of the magnetic circuit such that the elongated rod is only allowed to oscillate in a regular oscillating direction of the diaphragm.
2. The speaker apparatus according to claim 1, wherein the support member is made from a material of smaller friction coefficient than that portion of the magnetic circuit which surrounds the hollow portion.
3. The speaker apparatus according to claim 2, wherein the support member is a ceramic.
4. The speaker apparatus according to claim 2, wherein the support member is a bearing.
5. The speaker apparatus according to claim 1, wherein the diaphragm has an annular or conical shape, and the voice coil bobbin supports an inner periphery of the diaphragm.
6. The speaker apparatus according to claim 1, wherein the diaphragm

has an annular or conical shape, and the elongated rod supports an inner periphery of the diaphragm.

7. The speaker apparatus according to claim 1, wherein the diaphragm is planar.

8. The speaker apparatus according to claim 1 further including a frame connected to the magnetic circuit, and wherein an outer periphery of the diaphragm is mounted on the frame.

9. The speaker apparatus according to claim 1, wherein the elongated rod and the diaphragm are fixed to each other via a coupling element.

10. The speaker apparatus according to claim 1, wherein the respective support member is made from a heat-resistive material having a softening point higher than that portion of the magnetic circuit which surrounds the hollow portion.

11. The speaker apparatus according to claim 1, wherein the elongated rod is made from a heat-resistive material having a softening point higher than that portion of the magnetic circuit which surrounds the hollow portion.